U.S. ENVIRONMENTAL PROTECTION AGENCY
POLLUTION/SITUATION REPORT
Flat Top Mine - Removal Polrep
Initial Removal Polrep

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region VIII

Subject:	POLREP #1 Progress Flat Top Mine SDN000802781 Ludlow, SD Latitude: **45.8456780** Longitude: **-103.3678530**
To:	
From:	Shun-Ping Chau, OSC
Date:	11/21/2012
Reporting Period:	October 1, 2012 to Nov. 21, 2012

1. Introduction

1.1 Background

Site Number:	SDN000802781	Contract Number:	
D.O. Number:		Action Memo Date:	
Response Authority:	CERCLA	Response Type:	Time-Critical
Response Lead:	EPA	Incident Category:	Removal Action
NPL Status:	Non NPL	Operable Unit:	
Mobilization Date:	10/1/2012	Start Date:	10/2/2012
Demob Date:		Completion Date:	
CERCLIS ID:		RCRIS ID:	
ERNS No.:		State Notification:	
FPN#:		Reimbursable Account #:	

1.1.1 Incident Category

Time-critical removal.

1.1.2 Site Description

The Flat Top Mine Site is northeast of the town of Ludlow, Harding County, South Dakota. Uranium mining activities occurred around Ludlow in the North Cave Hills, South Cave Hills and Flint Buttes from the late 1950s to 1964 under the General Mining Laws and Public Law 357, which did not require any restoration. The North Cave Hills and South Cave Hills are part of the Custer National Forest and subsequently owned by the United States Forest Service (USFS).

The Flat Top Mine is located in the Flint Buttes and is currently on private ranch land. There have been two previous studies by the South Dakota School of Mines and Technology and the Oglala Lakota College around 2006 and 2007, but no clean-up activities have been done at the Flat Top Mine.

1.1.2.1 Location

The Site is located northeast of the town of Ludlow, in Harding County, South Dakota. Mining activities in the 1950s affected almost 1,000 acres of land in the region. The remnants of Flat Top Mine consist of a water filled pit approximately 1,200 ft by 500 ft. A series of smaller pits, test pits and trenches are currently located within approximately 10,000 acres of undeveloped land used for cattle and sheep ranching but also includes some residential structures.

1.1.2.2 Description of Threat

Uranium, arsenic, vanadium and molybdenum, defined by CERCLA Section 101(14) as hazardous substances, are naturally occurring in the Flint Buttes area. Previous mining activities removed the vegetation and top soil cover in certain areas and left large piles of waste materials and open pits that collect surface water. Many of the waste material piles have been covered with vegetation, but humans, livestock and wild animals are exposed to higher than background levels of these hazardous substances found in water which collects in open pits.

1.1.3 Preliminary Removal Assessment/Removal Site Inspection Results

Site assessment work conducted in 2009 and 2011 showed that the highest concentration of contamination occurs at and around an old mine pit that is now the largest pond on the north side of an old highwall, approximately 0.5 miles north of the town of Ludlow. Uranium was detected in soil sediments with concentrations up to 770 parts per million (ppm) and in surface water with concentrations up to 558 micrograms per liter (pg/L). EPA sets the safe drinking water standard for humans at 30 pg/L, and guidelines from several agricultural extension offices recommend a maximum concentration of 200 pg/L for livestock. Other elements of concern with elevated levels in the surface water were arsenic with concentrations ranging from 457 to 536 pg/L, vanadium with concentrations ranging from 73 to 258 pg/L, and molybdenum with concentrations ranging from 894 to 1,730 pg/L. The guidelines for drinking water standard for livestock recommend a maximum arsenic concentration of 200 to 500 pg/L, maximum vanadium concentration of up to100 pg/L, and maximum molybdenum concentration of 300 to 500 pg/L.

2. Current Activities

2.1 Operations Section

2.1.1 Narrative

Planned removal action includes treating water from the largest mine pit at the Site, returning the treated water to its original use as livestock drinking water and/or pasture irrigation, backfilling and re-vegetating the pit, and drilling wells to replace the livestock water supply.

2.1.2 Response Actions to Date

Water treatment has been posponed due to funding issues but expected to start in third quarter, FY2013.

Two water wells are being drilled to replace livestock water supply. The first well is complete, has clean water, a good flow rate, and livestock tanks. Drilling for the second well is currently at about 460 ft and is expected to be complete before December 31, 2012.

2.1.3 Enforcement Activities, Identity of Potentially Responsible Parties (PRPs)

2.1.4 Progress Metrics

Waste Stream	Medium	Quantity	Manifest #	Treatment	Disposal

2.2 Planning Section
No information available at this time.

2.3 Logistics Section
No information available at this time.

2.4 Finance Section
No information available at this time.

2.5 Other Command Staff
No information available at this time.

3. Participating Entities
No information available at this time.

4. Personnel On Site
No information available at this time.

5. Definition of Terms
No information available at this time.

6. Additional sources of information
No information available at this time.

7. Situational Reference Materials
No information available at this time.